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ECONOMIC PREREQUISITES OF MECHANICAL ENGINEERING DEVELOPMENT AND ITS ROLE IN THE INDUSTRIALIZATION OF THE SOVIET UNION

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1. A highly developed mechanical engineering industry has been created in the USSR within a historically short period. In 1960 the output of mechanical engineering increased over 300 - fold as compared to 1913 and the number of specialized branches, by which the state registers the output of production, was equal to 33 branches and 21 subbranches as compared to five branches in 1913. Mechanization of all branches of the people's economy took place and a technological revolution in methods of production was carried out in the branches of extractive industry and agriculture. Supply of labour with machinery has become the most important factor in growth of productivity of labour and in an immense increase of volume of industrial output as well as in a considerable rise of the income of the people, of their well-being and intellectual development. The experience of the Soviet Union is a convincing proof of the fact that an all-round development of mechanical engineering is the most important condition of the country's technical and economic independence and its defensive capacity.

2. An objective necessity to achieve this aim for industrially backward countries that entered the path of accelerated economic development is organization of their own mechanical engineering at a high rate, that outstrips the rate of development of other branches. At the initial stages of industrialization the rate of mechanical engineering preferential development should be higher than at the subsequent stages.

A concrete ratio in the development of mechanical engineering and other branches should be determined by plans, proceeding from the revealed need for mechanical engineering production and available production capacities, the extent of their employment as well as the resources of capital investments, metal, equipment.

3. Accelerated development of mechanical engineering calls for a number of conditions:

- centralisation on a state scale and planned policy of preferential development of mechanical engineering and the policy in the technical sphere;

- preferential allocation of capital investments, supply of material and labour;

- organization of a capacious interior market for mechanical engineering products;

- development of broad economic ties with industrially developed countries, especially at the initial stage, employment of their technical experience and the forms of organization of production;

- rational combination of technical reconstruction of existing enterprises with the construction of new ones.

In the Soviet Union after the Socialist revolution of 1917 in the course of one year all large mechanical engineering and metal-working enterprises were nationalized, state bodies of management were organized and there began working out of plans for turning out production at these enterprises.

During the period since 1917 till 1928 increase of industrial output was mainly achieved by way of rehabilitation of the existing enterprises with a considerable renewal of their equipment. Since 1928 in the USSR state perspective planning of the people's economy was put into practice, which included the planning of development of all industries and culture. Practically since that time there began a period of radical technical reconstruction of the people's economy on the basis of machinery. New construction is characteristic of this period.

Mechanical engineering development requires considerable capital expenditures and realization of the policy which favours mechanical engineering in distribution of the available capital investments, labour resources and training of cadres.

The share of investments into mechanical engineering during the period since 1918 till 1960 as compared to the whole sum of capital investments into industry was equal to 16.1 per cent; during the first five-year plan it was con-

siderably higher and was equal to 29 per cent; in 1940 out of the total number of industrial workers 29 per cent worked in the mechanical engineering; at present their number equals 30.5 per cent; 45 per cent of specialists with higher and 42 per cent of specialists with secondary education worked in the mechanical engineering in 1960.

Alongside the interior financial, material and labour resources aid on the part of the most developed countries is of great importance in the carrying out of industrialization. This aid was not rendered to the Soviet Union. But the Soviet Union employed international trade to buy machines, equipment, instruments and she used the service of foreign engineers and skilled workers, engaged by contracts.

4. In the interests of creation of one's own mechanical engineering industry and assimilation of the newest achievements of mechanical engineering techniques the experience of the most industrially developed countries should be broadly employed through purchase of the newest samples of articles of production, technical documents, consultations, instructing. All this will permit to shorten the periods of designing and organization of production, decrease expenditures.

5. Acceleration of industrialization may be promoted by a broad employment of cooperation of friendly countries in the construction of large enterprises. Alongside the construction of large enterprises with the aim of achieving the quickest "returns" of capital expenditures, it is expedient to construct small specialized factories, which should be equipped with new machinery and broadly cooperate between themselves.

6. Considerable difficulties in the development of mechanical engineering are caused by the necessity to have engineer cadres of many specialities and cadres of high skilled workers.

Training of workers in the USSR was carried on through a system of special technical schools (industrial schools, schools of factory-work training etc.), as well as through training and passing exams on minimum of technical knowledge without discontinuing basic work, through factory apprenticeship under the guidance of skilled workers and foremen, etc.

In the training of engineers the possibilities to receive education abroad in industrially developed countries must be used. Studying by correspondence and in evening classes as well as in the systems of factories - higher educational establishments are of special importance to train such cadres inside the country.

7. Employing the advantages of planned economy and the above mentioned directions of policy during a short period of time, a large-scale mechanical engineering industry was created in the Soviet Union, on the basis of which the processes in all branches of the people's economy were mechanized.

As far back as 1931 the USSR surpassed all countries, but the USA, in the output of mechanical engineering. The plan of development of the people's economy of the USSR for 1959-1965 and the general plan for the period of two decades envisage further preferential development of mechanical engineering as compared to the industry as a whole; they provide for the quickest possible increase of mechanical engineering output for power engineering chemical industry, agriculture, as well as production of instruments, means of automation and automatic lines in the volume, necessary to complete complex mechanization of industry in all branches and broad automation of industrial processes. Specialization of mechanical engineering enterprises will receive further development. Increase of mechanical engineering output during this period is achieved in a considerable degree by modernization of equipment and reconstruction of enterprises yielding great economic effects. With the aim of the quickest working out of new articles and organization of their industrial production a system of material stimulation (giving a bonus) for collectives of enterprises, research and designing institutes as well as for separate workers and specialists; state planned development of science and technology, state financing of technical progress, employment of means of enterprises and a system of a short-term credit by the bank as well as a system of encouraging prices for new, more technically perfect articles of mechanical engineering were broadly employed.

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